

**CONFIDENTIAL****Office Memorandum • UNITED STATES GOVERNMENT**

TO : Memorandum for the files, Contract [ ] Task II DATE: 22 October 1952 50X1

FROM [ ] 50X1

SUBJECT: Engineering Inspection Report - Thermoelectric Generator

1. A visit was made to the St. Paul Minnesota plant of the [ ] for the purpose of monitoring the progress of the subject contract. This visit was made on the afternoon of 15 October 1952 and the morning of 16 October 1952. The following personnel were present and took part in the discussion:

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[ ] Project Supervisor 50X1  
Project Engineer

2. Since the last discussion took place on this project, the contractor has discovered experimentally that a much more suitable thermo-electric alloy exists for this application. This alloy consists of 43% Zinc, 56.5% Antimony and 0.5% Aluminum. It is proposed to use this alloy as the thermo- positive element of the thermocouple and constantan for the thermo-negative element. Using this combination the contractor estimates that it is possible to develop a generator of the rated output which would weigh approximately 26 pounds compared to their previous estimate of 46 pounds. However, a considerable amount of investigation is still required to determine whether the properties of this new alloy can be controlled sufficiently in production quantities to be practicable. Another condition which will require more investigation is the tendency for this alloy to decompose and diffuse into the companion element at operating temperatures. Still another problem is the corrosion problem which exists considering the many different types of fuels which might be used to heat the elements.

3. Funds presently available under the contract will be fully expended by the first week in December. Considering this it was requested that [ ] come to Washington early in November for a conference in which the future of the program will be decided. At that time a progress report will be available covering the work performed during the months of August, September, and October. This report will summarize the end results of the contract and recommend the future programming that might be undertaken.

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